



SEQUENCE LISTING

<100> WEISGRABER, KARL H.
FARESE, ROBERT V.
RAFFAI, ROBERT
DONG, LIMING

<120> GENE-TARGETED ANIMAL MODEL OF
APOLIPOPROTEIN E4 DOMAIN INTERACTION AND USES THEREOF

<130> UCAL-222

<140> 10/017,718

<141> 2001-12-14

<150> 60/276,861

<151> 2001-03-16

<160> 13

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 299

<212> PRT

<213> homo sapiens

<400> 1

Lys	Val	Glu	Gln	Ala	Val	Glu	Thr	Glu	Pro	Glu	Pro	Glu	Leu	Arg	Gln
1				5				10						15	
Gln	Thr	Glu	Trp	Gln	Ser	Gly	Gln	Arg	Trp	Glu	Leu	Ala	Leu	Gly	Arg
			20					25					30		
Phe	Trp	Asp	Tyr	Leu	Arg	Trp	Val	Gln	Thr	Leu	Ser	Glu	Gln	Val	Gln
		35					40					45			
Glu	Glu	Leu	Leu	Ser	Ser	Gln	Val	Thr	Gln	Glu	Leu	Arg	Ala	Leu	Met
	50					55					60				
Asp	Glu	Thr	Met	Lys	Glu	Leu	Lys	Ala	Tyr	Lys	Ser	Glu	Leu	Glu	Glu
65				70					75					80	
Gln	Leu	Thr	Pro	Val	Ala	Glu	Glu	Thr	Arg	Ala	Arg	Leu	Ser	Lys	Glu
				85					90					95	
Leu	Gln	Ala	Ala	Gln	Ala	Arg	Leu	Gly	Ala	Asp	Met	Glu	Asp	Val	Cys
			100					105					110		
Gly	Arg	Leu	Val	Gln	Tyr	Arg	Gly	Glu	Val	Gln	Ala	Met	Leu	Gly	Gln
		115					120					125			
Ser	Thr	Glu	Glu	Leu	Arg	Val	Arg	Leu	Ala	Ser	His	Leu	Arg	Lys	Leu
	130					135					140				
Arg	Lys	Arg	Leu	Leu	Arg	Asp	Ala	Asp	Asp	Leu	Gln	Lys	Arg	Leu	Ala
145					150					155				160	
Val	Tyr	Gln	Ala	Gly	Ala	Arg	Glu	Gly	Ala	Glu	Arg	Gly	Leu	Ser	Ala
			165					170					175		
Ile	Arg	Glu	Arg	Leu	Gly	Pro	Leu	Val	Glu	Gln	Gly	Arg	Val	Arg	Ala
		180					185						190		
Ala	Thr	Val	Gly	Ser	Leu	Ala	Gly	Gln	Pro	Leu	Gln	Glu	Arg	Ala	Gln
		195					200					205			
Ala	Trp	Gly	Glu	Arg	Leu	Arg	Ala	Arg	Met	Glu	Glu	Met	Gly	Ser	Arg
	210				215						220				
Thr	Arg	Asp	Arg	Leu	Asp	Glu	Val	Lys	Glu	Gln	Val	Ala	Glu	Val	Arg

<212> PRT
 <213> CYNOMOLGUS MONKEY

<400> 3
 Lys Val Glu Gln Pro Val Glu Pro Glu Thr Glu Pro Glu Leu Arg Gln
 1 5 10 15
 Gln Ala Glu Gly Gln Ser Gly Gln Pro Trp Glu Leu Ala Leu Gly Arg
 20 25 30
 Phe Trp Asp Tyr Leu Arg Trp Val Gln Thr Leu Ser Glu Gln Val Gln
 35 40 45
 Glu Glu Leu Leu Ser Pro Gln Val Thr Gln Glu Leu Thr Thr Leu Met
 50 55 60
 Asp Glu Thr Met Lys Glu Leu Lys Ala Tyr Lys Ser Glu Leu Glu Glu
 65 70 75 80
 Gln Leu Ser Pro Val Ala Glu Glu Thr Arg Ala Arg Leu Ser Lys Glu
 85 90 95
 Leu Gln Ala Ala Gln Ala Arg Leu Gly Ala Asp Met Glu Asp Val Arg
 100 105 110
 Ser Arg Leu Val Gln Tyr Arg Ser Glu Val Gln Ala Met Leu Gly Gln
 115 120 125
 Ser Thr Glu Glu Leu Arg Ala Arg Leu Ala Ser His Leu Arg Lys Leu
 130 135 140
 Arg Lys Arg Leu Leu Arg Asp Ala Asp Asp Leu Gln Lys Arg Leu Ala
 145 150 155 160
 Val Tyr Gln Ala Gly Ala Arg Glu Gly Ala Glu Arg Gly Val Ser Ala
 165 170 175
 Ile Arg Glu Arg Leu Gly Pro Leu Val Glu Gln Gly Arg Val Arg Ala
 180 185 190
 Ala Thr Val Gly Ser Leu Ala Ser Gln Pro Leu Gln Glu Arg Ala Gln
 195 200 205
 Ala Leu Gly Glu Arg Leu Arg Ala Arg Met Glu Glu Met Gly Ser Arg
 210 215 220
 Thr Arg Asp Arg Leu Asp Glu Val Lys Glu Gln Val Ala Glu Val Arg
 225 230 235 240
 Ala Lys Leu Glu Glu Gln Ala Gln Gln Ile Ser Leu Gln Ala Glu Ala
 245 250 255
 Phe Gln Ala Arg Leu Lys Ser Trp Phe Glu Pro Leu Val Glu Asp Met
 260 265 270
 Gln Arg Gln Trp Ala Gly Leu Val Glu Lys Val Gln Ala Ala Val Gly
 275 280 285
 Ala Ser Thr Ala Pro Val Pro Ile Asp Asn His
 290 295

<210> 4
 <211> 293
 <212> PRT
 <213> rat

<400> 4
 Glu Gly Glu Leu Glu Val Thr Asp Gln Leu Pro Gly Gln Ser Asp Gln
 1 5 10 15
 Pro Trp Glu Gln Ala Leu Asn Arg Phe Trp Asp Tyr Leu Arg Trp Val
 20 25 30
 Gln Thr Leu Ser Asp Gln Val Gln Glu Glu Leu Gln Ser Ser Gln Val
 35 40 45
 Thr Gln Glu Leu Thr Val Leu Met Glu Asp Thr Met Thr Glu Val Lys
 50 55 60
 Ala Tyr Lys Lys Glu Leu Glu Glu Gln Leu Gly Pro Val Ala Glu Glu

65					70					75				80	
Thr	Arg	Ala	Arg	Leu	Thr	Lys	Glu	Val	Gln	Ala	Ala	Gln	Ala	Arg	Leu
				85					90					95	
Gly	Ala	Asp	Met	Glu	Asp	Leu	Arg	Asn	Arg	Leu	Gly	Gln	Tyr	Arg	Asn
			100					105					110		
Glu	Val	Asn	Thr	Met	Leu	Gly	Gln	Ser	Thr	Glu	Glu	Leu	Arg	Ser	Arg
			115				120					125			
Leu	Ser	Thr	His	Leu	Arg	Lys	Met	Arg	Lys	Arg	Leu	Met	Arg	Asp	Ala
			130			135					140				
Asp	Asp	Leu	Gln	Lys	Arg	Leu	Ala	Val	Tyr	Lys	Ala	Gly	Ala	Gln	Glu
145				150						155				160	
Gly	Ala	Glu	Arg	Gly	Val	Ser	Ala	Ile	Arg	Glu	Arg	Leu	Gly	Pro	Leu
				165					170					175	
Val	Glu	Gln	Gly	Arg	Gln	Arg	Thr	Ala	Asn	Leu	Arg	Trp	Arg	Arg	Pro
			180					185					190		
Ala	Pro	Arg	Asp	Arg	Ala	Gln	Ala	Leu	Ser	Asp	Arg	Ile	Arg	Gly	Arg
			195				200					205			
Leu	Glu	Glu	Val	Gly	Asn	Gln	Ala	Arg	Asp	Arg	Leu	Glu	Glu	Val	Arg
			210			215					220				
Glu	Gln	Met	Glu	Glu	Val	Arg	Ser	Lys	Met	Glu	Glu	Gln	Thr	Gln	Gln
225					230					235				240	
Ile	Arg	Leu	Gln	Ala	Glu	Ile	Phe	Gln	Ala	Arg	Ile	Lys	Gly	Trp	Phe
				245				250						255	
Glu	Pro	Leu	Val	Glu	Asp	Met	Gln	Arg	Gln	Trp	Ala	Asn	Leu	Met	Glu
			260					265				270			
Lys	Ile	Gln	Ala	Ser	Val	Ala	Thr	Asn	Ser	Ile	Ala	Ser	Thr	Thr	Val
		275					280					285			
Pro	Leu	Glu	Asn	Gln											
			290												

<210> 5
 <211> 293
 <212> PRT
 <213> mouse

<400> 5

Glu	Gly	Glu	Pro	Glu	Val	Thr	Asp	Gln	Leu	Glu	Trp	Gln	Ser	Asn	Gln
1				5				10						15	
Pro	Trp	Glu	Gln	Ala	Leu	Asn	Arg	Phe	Trp	Asp	Tyr	Leu	Arg	Trp	Val
			20					25					30		
Gln	Thr	Leu	Ser	Asp	Gln	Val	Gln	Glu	Glu	Leu	Gln	Ser	Ser	Gln	Val
		35					40					45			
Thr	Gln	Glu	Leu	Thr	Ala	Leu	Met	Glu	Asp	Thr	Met	Thr	Glu	Val	Lys
		50				55					60				
Ala	Tyr	Lys	Lys	Glu	Leu	Glu	Glu	Gln	Leu	Gly	Pro	Val	Ala	Glu	Glu
65					70				75					80	
Thr	Arg	Ala	Arg	Leu	Gly	Lys	Glu	Val	Gln	Ala	Ala	Gln	Ala	Arg	Leu
				85					90					95	
Gly	Ala	Asp	Met	Glu	Asp	Leu	Arg	Asn	Arg	Leu	Gly	Gln	Tyr	Arg	Asn
			100					105					110		
Glu	Val	His	Thr	Met	Leu	Gly	Gln	Ser	Thr	Glu	Glu	Ile	Arg	Ala	Arg
		115					120					125			
Leu	Ser	Thr	His	Leu	Arg	Lys	Met	Arg	Lys	Arg	Leu	Met	Arg	Asp	Ala
		130				135					140				
Asp	Asp	Leu	Gln	Lys	Arg	Leu	Ala	Val	Tyr	Lys	Ala	Gly	Ala	Arg	Glu
145				150						155				160	
Gly	Ala	Glu	Arg	Gly	Val	Ser	Ala	Ile	Arg	Glu	Arg	Leu	Gly	Pro	Leu
				165					170					175	

Val Glu Gln Gly Arg Gln Arg Thr Ala Asn Leu Gly Ala Gly Ala Ala
 180 185 190
 Gln Pro Leu Arg Asp Arg Ala Gln Ala Phe Gly Asp Arg Ile Arg Gly
 195 200 205
 Arg Leu Glu Glu Val Gly Asn Gln Ala Arg Asp Arg Leu Glu Glu Val
 210 215 220
 Arg Glu His Met Glu Glu Val Arg Ser Lys Met Glu Glu Gln Thr Gln
 225 230 235 240
 Gln Ile Arg Leu Gln Ala Glu Ile Phe Gln Ala Arg Leu Lys Gly Trp
 245 250 255
 Phe Glu Pro Ile Val Glu Asp Met His Arg Gln Trp Ala Asn Leu Met
 260 265 270
 Glu Lys Ile Gln Ala Ser Val Ala Thr Asn Pro Ile Ile Thr Pro Val
 275 280 285
 Ala Gln Glu Asn Gln
 290

<210> 6
 <211> 280
 <212> PRT
 <213> GUINEA PIG

<400> 6
 Asp Val Glu Pro Glu Val Glu Val Arg Glu Pro Ala Val Trp Gln Ser
 1 5 10 15
 Gly Gln Pro Trp Glu Leu Ala Leu Ser Arg Phe Trp Asp Tyr Leu Arg
 20 25 30
 Trp Val Gln Thr Leu Ser Asp Gln Val Gln Glu Glu Leu Leu Ser Asn
 35 40 45
 Gln Val Thr Gln Glu Leu Thr Leu Leu Ile Glu Asp Thr Met Lys Glu
 50 55 60
 Val Lys Ala Tyr Lys Ala Glu Leu Glu Lys Glu Leu Gly Pro Val Ala
 65 70 75 80
 Glu Asp Thr Lys Ala Arg Leu Ala Lys Glu Leu Gln Ala Ala Gln Ala
 85 90 95
 Arg Leu Gly Ala Asp Met Glu Glu Val Arg Asn Arg Leu Ser Gln Tyr
 100 105 110
 Arg Ser Glu Val Gln Ala Met Leu Gly Gln Ser Ser Glu Glu Leu Arg
 115 120 125
 Ala Arg Leu Thr Ser His Pro Arg Lys Met Lys Arg Arg Leu Gln Arg
 130 135 140
 Asp Ile Asp Glu Leu Gln Lys Arg Met Ala Val Tyr Lys Ala Gly Ala
 145 150 155 160
 Gln Glu Gly Ala Glu Arg Gly Val Ser Ala Ile Arg Glu Arg Leu Gly
 165 170 175
 Ser Leu Ile Glu Gln Gly Arg Leu Gln Ala Leu Ala Ser Gln Pro Leu
 180 185 190
 Gln Glu Arg Ala Gln Ala Trp Gly Glu Gln Met Arg Gly Arg Leu Glu
 195 200 205
 Lys Val Gly Ser Gln Ala Arg Asp Arg Leu Glu Glu Val Arg Glu Gln
 210 215 220
 Met Glu Glu Val Arg Val Lys Val Glu Glu Gln Ala Glu Ala Phe Gln
 225 230 235 240
 Ala Arg Leu Lys Ser Trp Phe Glu Pro Met Met Glu Asp Met Arg Arg
 245 250 255
 Gln Trp Ala Glu Leu Ile Gln Lys Val Gln Val Ala Val Gly Ala Ser
 260 265 270
 Thr Ser Ala Pro Ser Gln Glu Pro

<210> 7
 <211> 293
 <212> PRT
 <213> rabbit

<400> 7
 Glu Thr Glu Gln Glu Val Glu Val Pro Glu Gln Ala Arg Trp Lys Ala
 1 5 10 15
 Gly Gln Pro Trp Glu Leu Ala Leu Gly Arg Phe Trp Asp Tyr Leu Arg
 20 25 30
 Trp Val Gln Ser Leu Ser Asp Gln Val Gln Glu Glu Leu Leu Ser Ser
 35 40 45
 Gln Val Thr Gln Glu Leu Thr Met Leu Met Glu Glu Thr Met Lys Glu
 50 55 60
 Val Lys Ala Tyr Lys Ser Glu Leu Glu Glu Gln Leu Ser Pro Met Ala
 65 70 75 80
 Gln Glu His Arg Ala Arg Leu Ser Lys Glu Leu Gln Val Ala Gly Ala
 85 90 95
 Leu Glu Ala Asp Met Glu Asp Val Cys Asn Arg Leu Ala Gln Tyr Arg
 100 105 110
 Gly Glu Ala Gln Ala Met Leu Gly Gln Ser Thr Glu Glu Leu Ala Arg
 115 120 125
 Ala Phe Ser Ser His Leu Arg Lys Leu Arg Lys Arg Leu Leu Arg Asp
 130 135 140
 Ala Glu Asp Leu Gln Lys Arg Met Ala Val Tyr Gly Ala Gly Ala Arg
 145 150 155 160
 Glu Gly Ala Glu Arg Gly Val Ser Ala Val Arg Glu Arg Leu Gly Ser
 165 170 175
 Arg Leu Glu Arg Gly Arg Leu Arg Val Ala Thr Val Gly Thr Leu Ala
 180 185 190
 Gly Arg Pro Leu Arg Glu Arg Ala Gln Ala Trp Gly Glu Arg Leu Arg
 195 200 205
 Gly His Leu Glu Glu Val Gly Ser Arg Ala Arg Asp Arg Leu Asn Glu
 210 215 220
 Val Arg Glu Gln Val Glu Glu Val Arg Val Lys Val Glu Glu Gln Ala
 225 230 235 240
 Pro Gln Met Arg Leu Gln Ala Glu Ala Phe Gln Ala Arg Leu Lys Ser
 245 250 255
 Trp Phe Glu Pro Leu Val Glu Asp Met Gln Arg Gln Trp Ala Gly Leu
 260 265 270
 Val Glu Lys Leu Gln Ala Ala Met Pro Ser Lys Ala Pro Ala Ala Ala
 275 280 285
 Pro Ile Glu Asn Gln
 290

<210> 8
 <211> 298
 <212> PRT
 <213> cow

<400> 8
 Asp Met Glu Gly Glu Leu Gly Pro Glu Glu Pro Leu Thr Thr Gln Gln
 1 5 10 15
 Pro Arg Gly Lys Asp Ser Gln Pro Trp Glu Gln Ala Leu Gly Arg Phe
 20 25 30

Trp	Asp	Tyr	Leu	Arg	Trp	Val	Gln	Thr	Leu	Ser	Asp	Gln	Val	Gln	Glu
	35						40					45			
Glu	Leu	Leu	Asn	Thr	Gln	Val	Ile	Gln	Glu	Leu	Thr	Ala	Leu	Met	Glu
	50					55					60				
Glu	Thr	Met	Lys	Glu	Val	Lys	Ala	Tyr	Lys	Glu	Glu	Leu	Glu	Gly	Gln
65					70					75					80
Leu	Gly	Pro	Met	Ala	Gln	Glu	Thr	Gln	Ala	Arg	Val	Ser	Lys	Glu	Leu
				85					90					95	
Gln	Ala	Ala	Gln	Ala	Arg	Leu	Gly	Ser	Asp	Met	Glu	Asp	Leu	Arg	Asn
			100					105					110		
Arg	Leu	Ala	Gln	Tyr	Arg	Ser	Glu	Val	Gln	Ala	Met	Leu	Gly	Gln	Ser
			115				120					125			
Thr	Glu	Glu	Leu	Arg	Ala	Arg	Met	Ala	Ser	His	Leu	Arg	Lys	Leu	Pro
	130					135					140				
Lys	Arg	Leu	Leu	Arg	Asp	Ala	Asp	Asp	Leu	Lys	Lys	Arg	Leu	Ala	Val
145					150					155					160
Tyr	Gln	Ala	Gly	Ala	Ser	Glu	Gly	Ala	Glu	Arg	Ser	Leu	Ser	Ala	Ile
			165						170					175	
Arg	Glu	Arg	Phe	Gly	Pro	Leu	Val	Glu	Gln	Gly	Gln	Ser	Arg	Ala	Ala
			180					185					190		
Thr	Leu	Ser	Thr	Leu	Ala	Gly	Gln	Pro	Leu	Leu	Glu	Arg	Ala	Glu	Ala
	195						200					205			
Trp	Arg	Gln	Lys	Leu	His	Gly	Arg	Leu	Glu	Glu	Val	Gly	Val	Arg	Ala
	210					215					220				
Gln	Asp	Arg	Leu	Asp	Lys	Ile	Arg	Gln	Gln	Leu	Glu	Glu	Val	His	Ala
225					230					235					240
Lys	Val	Glu	Glu	Gln	Gly	Asn	Gln	Met	Arg	Leu	Gln	Ala	Glu	Ala	Phe
				245					250					255	
Gln	Ala	Arg	Leu	Arg	Ser	Trp	Phe	Glu	Pro	Leu	Val	Glu	Asp	Met	Gln
			260					265					270		
Arg	Gln	Trp	Ala	Gly	Leu	Val	Glu	Lys	Val	Gln	Leu	Ala	Leu	Arg	Pro
	275						280					285			
Ser	Pro	Thr	Ser	Pro	Pro	Ser	Glu	Asn	His						
	290					295									

<210> 9
 <211> 291
 <212> PRT
 <213> dog

<400> 9

Lys	Val	Gln	Gln	Glu	Leu	Glu	Pro	Glu	Ala	Gly	Trp	Gln	Thr	Gly	Gln
1				5					10					15	
Pro	Trp	Glu	Ala	Ala	Leu	Ala	Arg	Phe	Trp	Asp	Tyr	Leu	Arg	Trp	Val
			20					25					30		
Gln	Thr	Leu	Ser	Asp	Gln	Val	Gln	Glu	Gly	Val	Leu	Asn	Thr	Gln	Val
		35					40					45			
Thr	Gln	Glu	Leu	Thr	Ala	Leu	Met	Asp	Glu	Thr	Met	Lys	Glu	Val	Lys
	50					55					60				
Ala	Tyr	Lys	Ala	Glu	Leu	Asp	Glu	Gln	Leu	Gly	Pro	Met	Thr	Ser	Glu
65					70					75					80
Thr	Gln	Ala	Arg	Val	Ala	Lys	Glu	Leu	Gln	Ala	Ala	Gln	Ala	Arg	Leu
				85					90					95	
Arg	Ala	Asp	Met	Glu	Asp	Val	Arg	Asn	Arg	Leu	Thr	Gln	Tyr	Arg	Gly
		100						105					110		
Glu	Leu	Gln	Ala	Met	Leu	Gly	Gln	Ser	Ser	Glu	Glu	Leu	Arg	Ala	Arg
		115					120					125			
Phe	Ala	Ser	His	Met	Arg	Lys	Leu	Arg	Lys	Arg	Val	Leu	Arg	Asp	Ala

